

40. (Currently amended) The α -2,3-sialyltransferase polypeptide of claim 39, wherein the amino acid tag is a member selected from the group consisting of polyhistidine, maltose binding protein, myc, V-5, and FLAG DYKDDDK.

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41. (Currently amended) A method of adding a sialic acid residue to an acceptor molecule comprising a terminal galactose residue, the method comprising contacting the acceptor molecule with an activated sialic acid molecule and an α -2,3-sialyltransferase polypeptide of claim 35 or claim 37.

42. (Previously presented) The method of claim 41, wherein the terminal galactose residue is linked through a linkage to a second residue in the acceptor molecule.

43. (Previously presented) The method of claim 42, wherein the linkage is a β 1,4 linkage.

44. (Previously presented) The method of claim 43, wherein the second residue is a Glc or a GlcNAc.

45. (Previously presented) The method of claim 42, wherein the linkage is a β 1,3 linkage.

46. (Previously presented) The method of claim 45, wherein the second residue is a GlcNAc or a GalNAc.

47. (Previously presented) The method of claim 41, wherein the activated sialic acid is CMP-Neu5Ac.

48. (Currently amended) The method of claim 41, ~~comprising contacting the acceptor molecule with an activated sialic acid molecule and an α -2,3-sialyltransferase polypeptide of claim 37~~ wherein the α -2,3-sialyltransferase polypeptide comprises an amino acid sequence with at least 95% identity to residues 1-328 of SEQ ID NO:2, over the entire length of residues 1-328.

49. (Previously presented) The method of claim 41, wherein the α -2,3-sialyltransferase polypeptide further comprises an amino acid tag.

50. (Currently amended) The method of claim 49, wherein the amino acid tag is a member selected from the group consisting of polyhistidine, maltose binding protein, myc, V-5, and FLAG DYKDDDK.

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